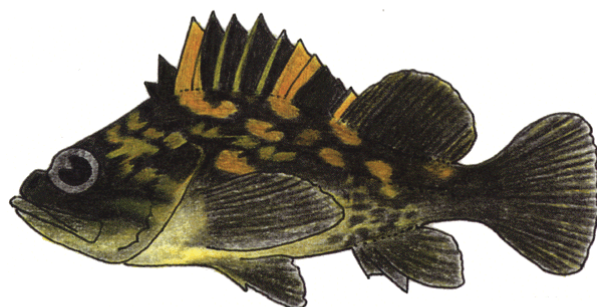


Black & Yellow Rockfish, *Sebastes chrysomelas*

1993-1999 Commercial Catch by Ports & Blocks



Marine Fishery Profiles

Volume 1: Nearshore

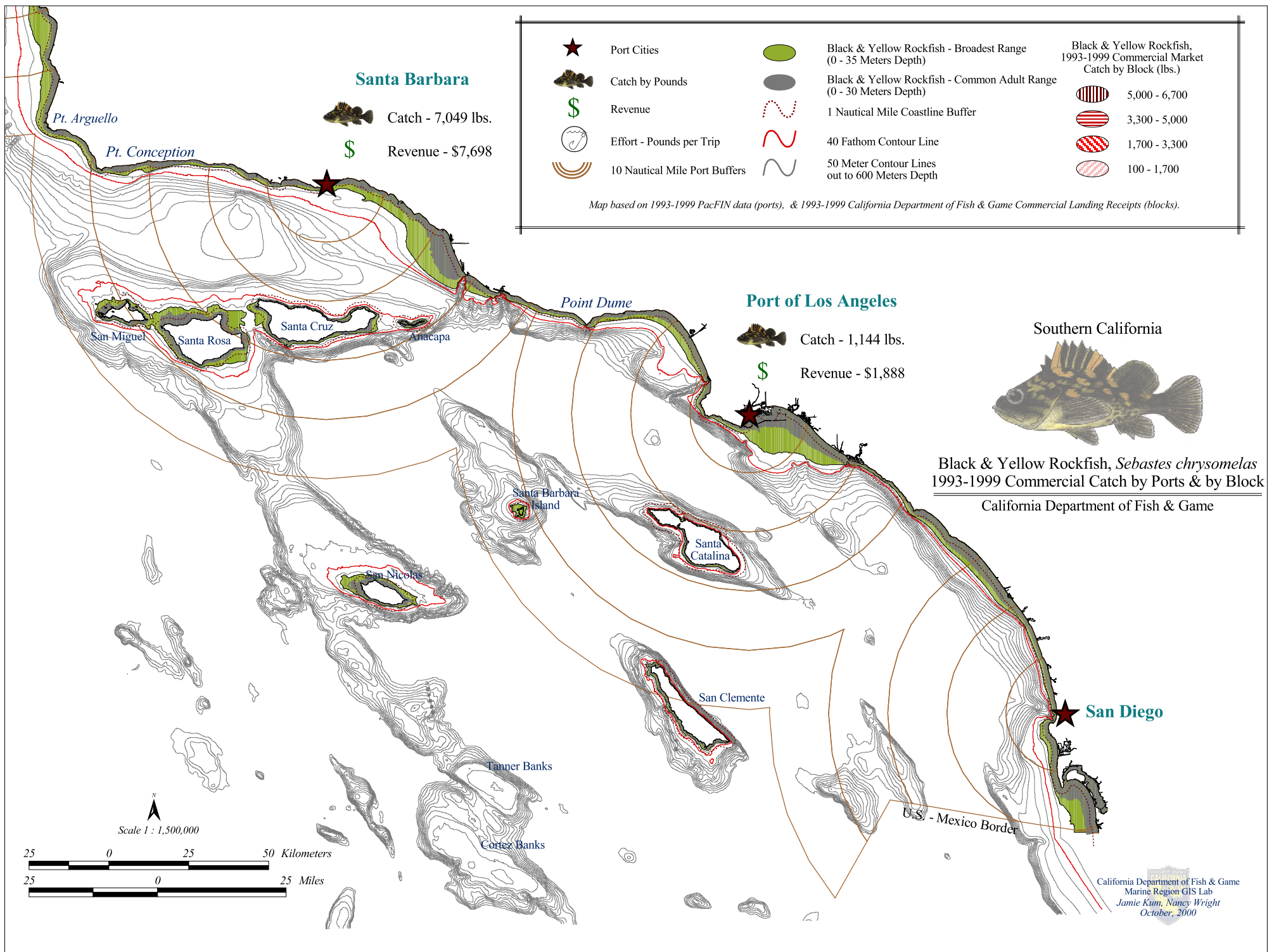
Marine Region GIS Lab

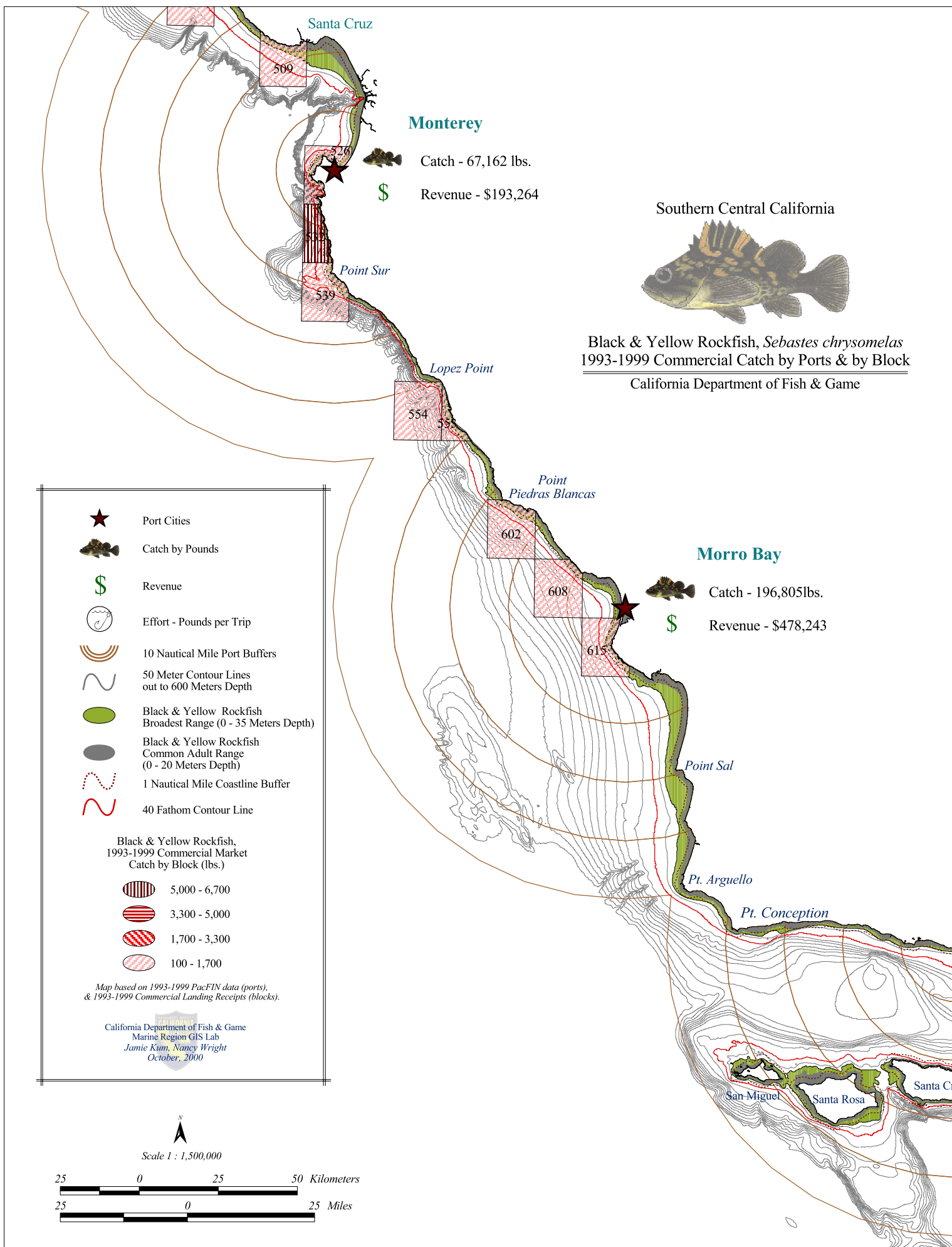
Nancy Wright	Eric Knaggs
Jamie Kum	Bob Leos
Chad King	Colleena Perez



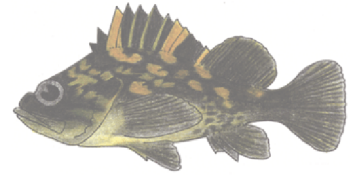
California Department of Fish & Game
Marine Region

December 2000





Northern Central California



Black & Yellow Rockfish, *Sebastes chrysomelas*
 1993-1999 Commercial Catch by Ports & by Block
 California Department of Fish & Game

Bodega Bay



Catch - 17,545 lbs.



Revenue - \$39,797

San Francisco



Catch - 7,477 lbs.



Revenue - \$11,922

Half Moon Bay

478
502

Point Año Nuevo

Santa Cruz

509

Monterey



Catch - 67,162 lbs.



Revenue - \$193,264

Point Sur

539

Lopez Point

554

Point Piedras Blancas

602

- ★ Port Cities
- Catch by Pounds
- \$ Revenue
- Effort - Pounds per Trip
- 10 Nautical Mile Port Buffers
- 50 Meter Contour Lines out to 600 Meters Depth
- Black & Yellow Rockfish Broadest Range (0 - 35 Meters Depth)
- Black & Yellow Rockfish Common Adult Range (0 - 20 Meters Depth)
- 1 Nautical Mile Coastline Buffer
- 40 Fathom Contour Line

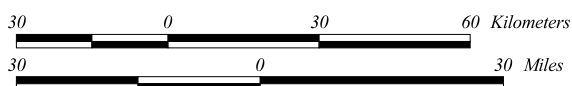
Black & Yellow Rockfish,
 1993-1999 Commercial Market
 Catch by Block (lbs.)

- 5,000 - 6,700
- 3,300 - 5,000
- 1,700 - 3,300
- 100 - 1,700

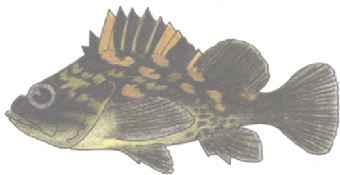
Map based on 1993-1999 PacFIN data (ports),
 & 1993-1999 Commercial Landing Receipts (blocks).

California Department of Fish & Game
 Marine Region GIS Lab
 Jamie Kum, Nancy Wright
 October, 2000

Scale 1 : 1,500,000

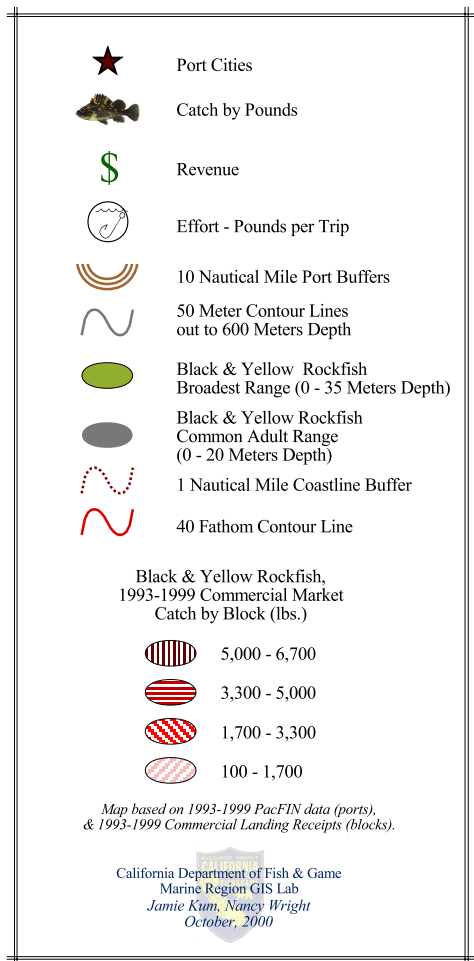


Northern California



Black & Yellow Rockfish, *Sebastes chrysomelas* 1993-1999 Commercial Catch by Ports & by Block

California Department of Fish & Game



N
 Scale 1 : 1,500,000

25 0 25 50 Kilometers
 25 0 25 Miles

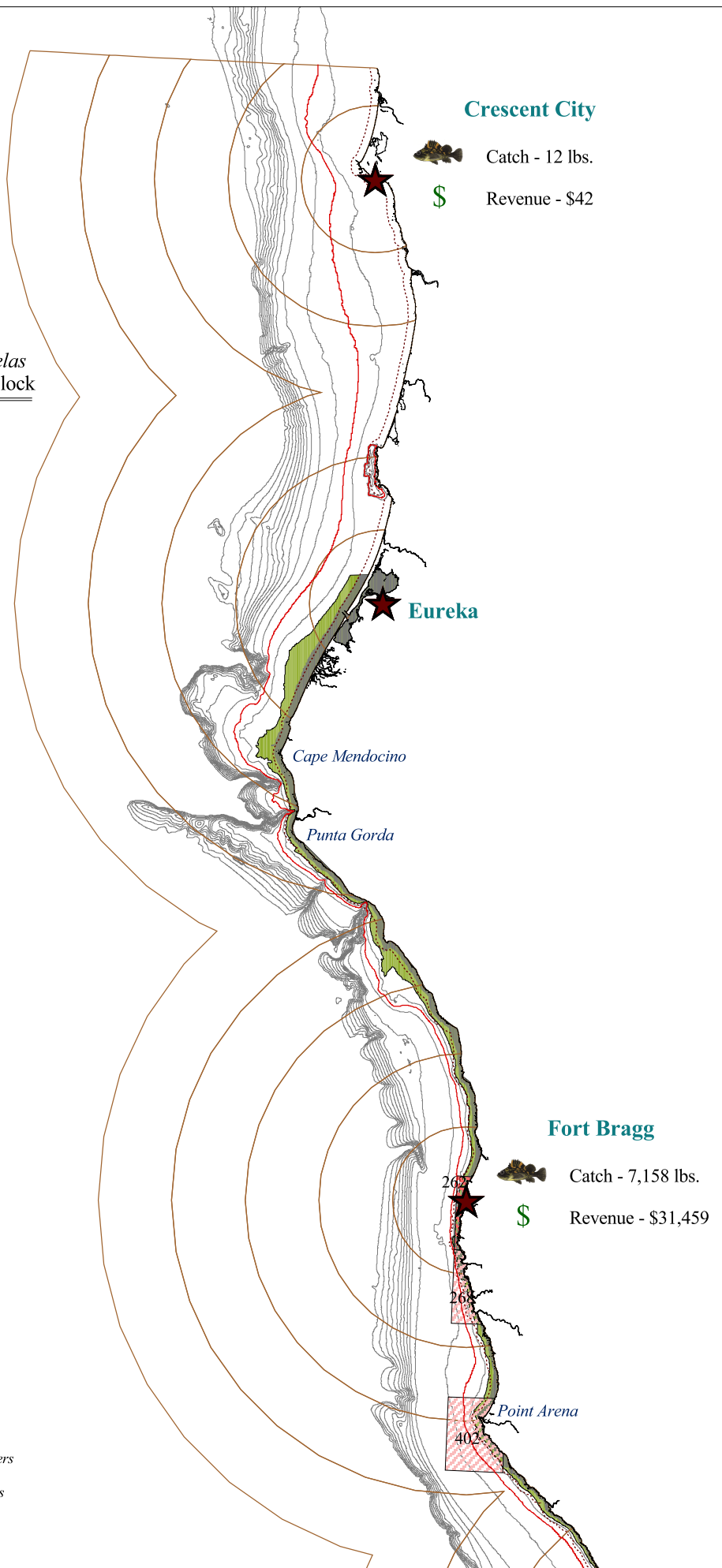
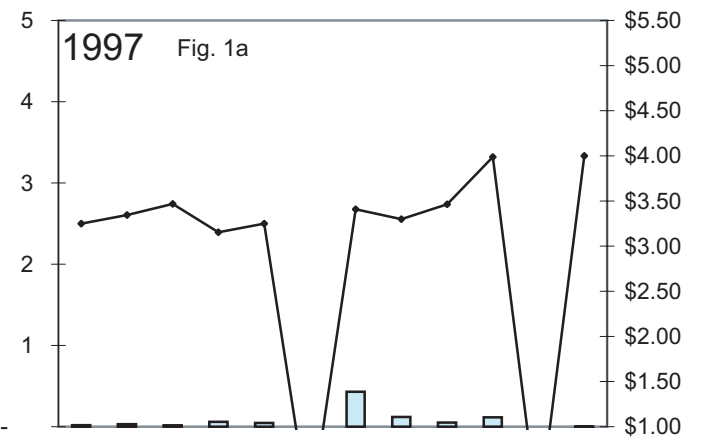


Figure 1. (refer to table 1) CDFG Commercial Receipts Data (1993 - 1999)
Total Pounds of Black & Yellow Rockfish Caught and Average Price per Pound by Month

Pounds (x 1,000)

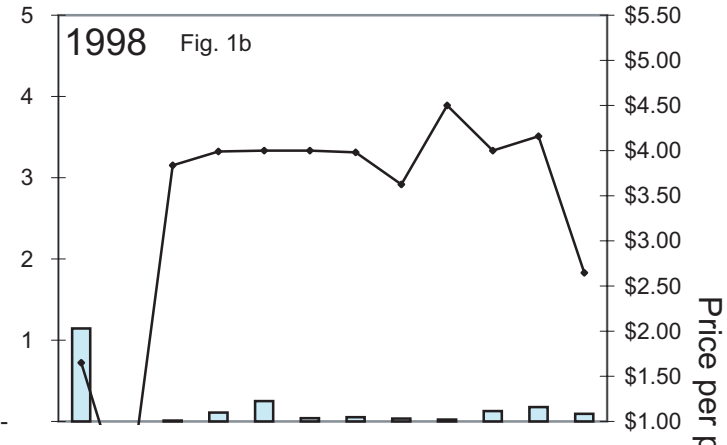
1993

No Data



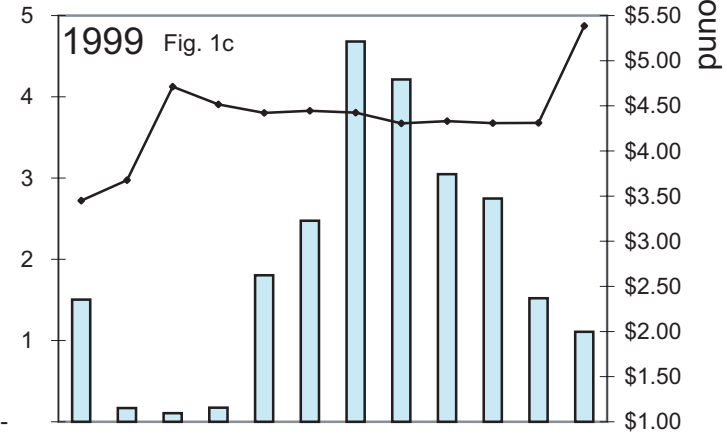
1994

No Data



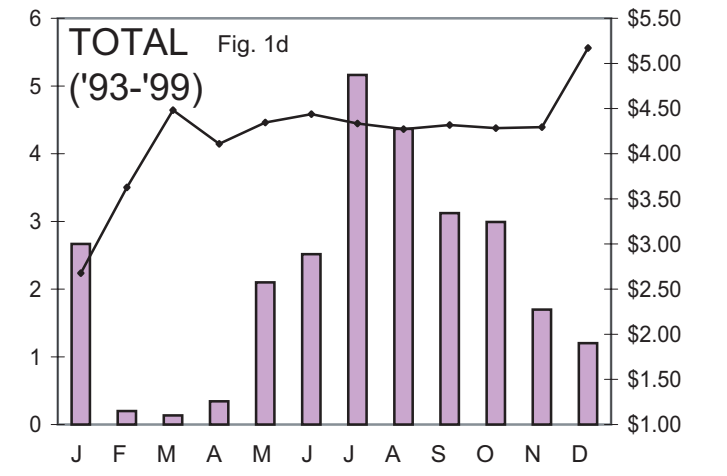
1995

No Data



1996

No Data



Price per pound

Table 1. (refer to fig. 1) CDFG Commercial Receipts Data (1997 - 1999):Total Pounds of Black & Yellow Rockfish Caught and Average Price per Pound by Month

1997

Table 1a

Month	Total Pounds	Price per Pound
Jan	18	\$3.25
Feb	31	\$3.34
Mar	17	\$3.47
Apr	60	\$3.15
May	47	\$3.25
Jun	no data	no data
Jul	431	\$3.41
Aug	119	\$3.30
Sep	51	\$3.46
Oct	116	\$3.99
Nov	no data	no data
Dec	1	\$4.00
Total	889	\$3.44

1998

Table 1b

Month	Total Pounds	Price per Pound
Jan	1,144	\$1.65
Feb	no data	no data
Mar	11	\$3.84
Apr	109	\$3.99
May	250	\$4.00
Jun	40	\$4.00
Jul	52	\$3.98
Aug	35	\$3.63
Sep	24	\$4.50
Oct	128	\$4.00
Nov	177	\$4.16
Dec	94	\$2.65
Total	2,063	\$2.65

No data for 1993-1996

1999

Table 1c

Month	Total Pounds	Price per Pound
Jan	1,504	\$3.45
Feb	169	\$3.68
Mar	106	\$4.71
Apr	174	\$4.52
May	1,804	\$4.42
Jun	2,475	\$4.45
Jul	4,680	\$4.42
Aug	4,213	\$4.31
Sep	3,048	\$4.33
Oct	2,748	\$4.31
Nov	1,521	\$4.31
Dec	1,107	\$5.39
Total	23,550	\$4.35

TOTAL
'97 - '99

Table 1d

Month	Total Pounds	Price per Pound
Jan	2,666	\$2.68
Feb	200	\$3.63
Mar	134	\$4.48
Apr	344	\$4.11
May	2,100	\$4.35
Jun	2,515	\$4.44
Jul	5,163	\$4.33
Aug	4,367	\$4.27
Sep	3,122	\$4.32
Oct	2,991	\$4.28
Nov	1,698	\$4.29
Dec	1,201	\$5.17
Total	26,502	\$4.19

Figure 2. (refer to table 2) Pacific Fisheries Information Network Data (1993 - 1999)
Total Pounds of Black & Yellow Rockfish Caught and Average Price per Pound by Month



Table 2. (refer to fig. 2) Pacific Coast Fisheries Information Network Data (1993 - 1999)
Total Pounds of Black & Yellow Rockfish Caught and Average Price per Pound by Month

1993
Table 2a

Month	Total Pounds	Price per Pound
Jan	817	\$1.85
Feb	493	\$1.67
Mar	1,127	\$2.10
Apr	101	\$1.65
May	405	\$1.55
Jun	484	\$1.45
Jul	764	\$1.49
Aug	689	\$1.44
Sep	869	\$1.46
Oct	1,034	\$1.50
Nov	792	\$1.66
Dec	270	\$1.66
Total	7,845	\$1.65

1997
Table 2e

Month	Total Pounds	Price per Pound
Jan	2,044	\$2.86
Feb	2,124	\$2.82
Mar	2,562	\$2.79
Apr	4,754	\$2.67
May	6,480	\$2.52
Jun	3,911	\$2.22
Jul	6,510	\$2.14
Aug	4,538	\$2.39
Sep	2,823	\$2.63
Oct	4,284	\$2.73
Nov	1,608	\$2.61
Dec	2,303	\$2.69
Total	43,941	\$2.53

1994
Table 2b

Month	Total Pounds	Price per Pound
Jan	1,119	\$1.98
Feb	786	\$1.98
Mar	898	\$1.98
Apr	1,151	\$1.99
May	1,537	\$1.96
Jun	1,408	\$1.85
Jul	2,877	\$1.78
Aug	2,471	\$1.48
Sep	3,093	\$1.71
Oct	4,428	\$1.98
Nov	3,274	\$2.24
Dec	2,610	\$2.31
Total	25,652	\$1.94

1998
Table 2f

Month	Total Pounds	Price per Pound
Jan	2,041	\$2.24
Feb	173	\$3.38
Mar	1,947	\$2.56
Apr	5,323	\$3.53
May	3,359	\$2.79
Jun	7,331	\$2.29
Jul	5,097	\$2.48
Aug	4,948	\$2.58
Sep	6,019	\$2.65
Oct	8,371	\$2.42
Nov	4,086	\$2.54
Dec	5,825	\$2.49
Total	54,520	\$2.60

1995
Table 2c

Month	Total Pounds	Price per Pound
Jan	594	\$2.06
Feb	4,848	\$1.99
Mar	2,472	\$2.04
Apr	1,872	\$2.06
May	3,681	\$1.89
Jun	5,500	\$2.01
Jul	9,465	\$1.95
Aug	5,399	\$1.96
Sep	6,381	\$2.06
Oct	10,350	\$2.32
Nov	10,904	\$2.03
Dec	5,551	\$2.26
Total	67,017	\$2.07

1999
Table 2g

Month	Total Pounds	Price per Pound
Jan	4,222	\$3.25
Feb	2,531	\$3.24
Mar	1,843	\$3.09
Apr	466	\$3.59
May	4,220	\$3.57
Jun	5,869	\$3.57
Jul	10,559	\$3.40
Aug	6,860	\$3.75
Sep	6,652	\$3.71
Oct	4,573	\$3.97
Nov	2,406	\$4.29
Dec	1,115	\$5.39
Total	51,316	\$3.63

1996
Table 2d

Month	Total Pounds	Price per Pound
Jan	5,291	\$2.57
Feb	7,778	\$1.88
Mar	10,092	\$2.10
Apr	3,102	\$2.63
May	4,576	\$2.72
Jun	6,495	\$2.69
Jul	5,471	\$2.10
Aug	3,605	\$2.07
Sep	3,405	\$2.07
Oct	1,328	\$2.29
Nov	1,449	\$2.72
Dec	1,470	\$2.72
Total	54,062	\$2.30

TOTAL
'93 - '99
Table 2h

Month	Total Pounds	Price per Pound
Jan	16,128	\$2.65
Feb	18,733	\$2.21
Mar	20,941	\$2.30
Apr	16,769	\$2.84
May	24,258	\$2.63
Jun	30,998	\$2.52
Jul	40,743	\$2.42
Aug	28,510	\$2.53
Sep	29,242	\$2.56
Oct	34,368	\$2.55
Nov	24,519	\$2.43
Dec	19,144	\$2.60
Total	304,353	\$2.51

Abbreviated Life History of Black and Yellow Rockfish (*Sebastes chrysomelas*)

Chrysomelas, which is Latin for black and yellow, describes the coloration of this species. They are black or dark brown with yellow blotches. Gopher rockfish (*Sebastes carnatus*) resemble them very closely, but gophers are brown or dark brown with large pink or whitish blotches. Both species are deep bodied with large head spines.

Distribution, Stock Structure and Migration

Black-and-yellow rockfish are distributed from Eureka, northern California to Isla San Natividad, central Baja California, but they are less common south of San Diego, California. They are demersal (bottom dwelling), usually in water less than 60 ft, although they have also been found at depths up to 120 ft. They are a residential species with homing ability, and they inhabit kelp beds and rocky reefs. After establishing residence, the adults are highly territorial and travel no more than 2 km from their home range.

Age and Growth

Whole otoliths have been used to age this species to a maximum of 20 to 22 yr. Based on a calculated age-length relationship, an 8-in. TL black-and-yellow rockfish is approximately 3-4 yr old, and a 10-in. fish is approximately 6 yr old, and a 12-in. fish is 10-11 yr old. The maximum-recorded total length of this species is 15.4 inches.

Reproduction, Fecundity and Seasonality

In central and northern California waters, males and females reach first maturity at 3 yr old, possibly as old as 4 yr for males and 6 yr for females. Corresponding total lengths range from 5.1 to 9.4 in. TL for males, and 5.3 to 9.6 in. TL for females. Fifty percent of the male population will reach maturity at 3 yr old, between 5.1 and 6.5 in. TL, while half of the female population will reach first maturity between 5.3 and 6.3 in. TL, at 3 or 4 yr old.

Spawning occurs off California from February through the end of July, with peak spawning in February and March. Female black-and-yellows may be carrying fertilized eggs anytime between October and the end of February. In central California, June is the primary month of first appearance of young-of-the-year in kelp bed areas, and they are usually first

observed in the kelp canopy.

Natural Mortality

Estimates of natural mortality are not available for black-and-yellow rockfish.

Diseases

No information is available regarding diseases in this species.

Predator/Prey Relationships

Adult black-and-yellows are nocturnal feeders, ambushing their prey between dawn and dusk. Predators of the adults include sharks, dolphins, and seals, while juveniles are prey of birds, porpoises, and fishes, including rockfishes, lingcod, cabezon, and salmon.

Competition

Black-and-yellow rockfish probably compete for food and space with gopher rockfish. When both species are present, the more aggressive black-and-yellows exclude gophers from shallower depths.

Critical Habitat

Larvae and young juveniles are pelagic, but the juveniles will eventually become demersal and settle on nearshore rocky areas or in kelp forests. Among the nearshore rockfishes, this species and grass rockfish have the most shallow depth distributions.

Status of Stocks

No formal stock assessments have been made for this species